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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,577	08/23/2005	Allen K Murray	355870.900440	9310

7590 06/11/2008  
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EXAMINER
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CHUNG, RAYMOND

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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06/11/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/501,577	<b>Applicant(s)</b> MURRAY, ALLEN K	
	<b>Examiner</b> RAYMOND CHUNG	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:

The instant specification indicates a priority claim to “U.S. Provisional Application 60/340,937, filed on 10 January 2002”, which is incorporated by reference. It is suggested that the claim to priority be corrected to reflect U.S. Provisional Application 60/348,937.

Appropriate correction is required.

### ***Claim Objections***

2. Claims 11-13 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regards to claim 1, the instant claim recites “improving fabric properties”. The term “improving” renders the claim indefinite because the extent of improvement in fabric properties that is required by the claim is unclear.

With regards to claim 4, the instant claim recites “essentially pure cellulose”. The term “essentially” renders the claim indefinite because the level of purity of cellulose that is required by the claim is unclear.

With regards to claim 5, the instant claim recites “specific enzyme degradation”. The term “specific” renders the claim indefinite because the level of specificity of the enzyme degradation required by the instant claim is unclear.

With regards to claim 6, the instant claim recites “different pH’s”. The term “different pH’s” renders the claim indefinite because it is unclear as to the pH levels the claim is intended to encompass.

With regards to claims 7-10, the instant claims recite “different types”. The term “different types” renders the claims indefinite because it is unclear as to the types of cellulases and proteases the claims are intended to encompass.

For the purpose of this Office Action, “different pH’s” in claim 6 and “different types” in claims 7-10 will be interpreted as any pH and any type, respectively.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Murray (WO 99/35491).

With regards to claims 1-3, Murray discloses treatment of cotton fibers with water-soluble carbodiimide to form amide bonds between carboxyl and amino groups of the amino acid constituents of the protein to which cellulose multimers have been found to be attached. Murray further teaches that the fibers become more resistant to enzymatic degradation and that chemical cross-linking via compounds such as carbodiimide is a way to reduce loss of soluble material during washing and, thereby, extend the life of cotton fabrics, which can be construed as improving said fabrics (P25/L15-26).

With regards to claim 4, Murray teaches that 25 DPA cotton fibers can be enzymatically degraded using a process comprising the steps of sequentially treating the fibers with cellulose followed by protease (P23/L10-11).

Murray does not explicitly teach the limitation "to yield essentially pure cellulose". However, said yielding of essentially pure cellulose would be inherent in the teachings of the prior art because it is supported by the use of similar materials (i.e. cotton fibers, cellulase, and protease) and similar process steps (i.e. sequential enzymatic treatment of cotton fibers with cellulase and then protease). The burden is upon the applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. See MPEP 2112.

With regards to claims 5-10, Murray teaches enzymatic degradation of 25 DPA cotton fibers using a process comprising the steps of sequentially treating the fibers with

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cellulose followed by protease (P23/L10-11) and that products resulting from said degradation, such as glycoconjugates, which are disclosed as cell wall precursors, can be analyzed (P8/L6-23). This can be construed as a method of characterizing cotton fiber cell walls. Furthermore, Murray teaches steps comprising various pH's, such as pH levels ranging from 5.0-5.2 (P22/L20). In addition, Murray teaches the use of various proteases, such as trypsin, chymotrypsin, and pepsin (P21/L3), as well as the use of *T. reesei* cellulase (P22/L24).

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAYMOND CHUNG whose telephone number is (571)270-3881. The examiner can normally be reached on Monday-Thursday, 9am-6pm EST, Alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lorna M Douyon/  
Primary Examiner, Art Unit 1796

/R.C./  
3 June 2008